**Deborah Middleton**

**LESSON: WATER SUPPLY AND SANITATION: NYC VS. PERU (SOUTH AMERICA**)

**GRADE: THIRD GRADE**

**SUBJECT: SCIENCE, SOCIAL STUDIES, ENGLISH**

**STUDENTS WILL:**

* **UNDERSTAND how our water supply system works (N.Y.C.)**
* **UNDERSTAND how crucial clean water is for Peru and its importance as**

**A natural resource**

* **IDENTIFY how people and the environment of Peru and NYC can affect their Water Supply**

**(HUMAN ENVIRONMENT INTERACTION**

* **DIFFERENTIATE between the Water Supply System of NYC and Peru (South America)**
* **SUMMARIZE key facts through the use of a post-assessment tool**

**TEACHING TIME: 3 – 4 Lessons (45 min. each)**

**MATERIALS:**

* **GRAPHIC ORGANIZERS (KWL chart, EXIT SLIPS, VENN DIAGRAM, FACTS, QUESTIONS, RESPONSES: COMPREHENSION SHEET)**
* **MAPS OF NY WATER-SUPPLY SYSTEM**
* **MAPS OF PERU (NATURAL RESOURCES)**
* **MICROSCOPES**

**VOCABULARY:**

* **AQUIFERS**
* **AQUEDUCT**
* **CONDENSATION**
* **CATSKILL MOUNTAINS**
* **FILTRATION**
* **GROUNDWATER**
* **PURIFICATION**
* **RESERVOIR**
* **RUNOFF**
* **VAPOR**
* **WATER CYCLE**
* **WATERSHED**

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**BACKGROUND:**

**Most adults and children who live in an Urban Environment “take for granted” their ability to drink clean water. This small unit will teach children to treasure our Water Supply System, as they compare it to Peru ( studying a country in South America is in compliance with our State Curriculum). Students will also understand that lakes and rivers can be restored to benefit the ecosystem. In addition, students will compare and contrast the two Water Supply systems, understand the relationship between the environment and human interactions, and lastly summarize their findings to insure comprehension. Scaffolding will occur when students are immersed in books and articles that are both non-fiction and science related narrative tales. Students will use graphic organizers as a pre and post assessment, and as a tool to insure comprehension.**

**PROCEDURE:**

* **ESSENTIAL QUESTION: DID YOU EVER WONDER HOW THE WATER YOU DRINK GETS TO THE FAUCET IN YOUR KITCHEN?**

**Before we begin our investigation and answer this question, each person will complete a KWL chart and we will share what we know about our Water System. (Teacher lists on the board all the facts we know**

* **Read pertinent parts of the book THE MAGIC SCHOOL BUS AT THE WATERWORKS**
* **Jot down notes that will help them answer the question.**
* **ESSENTIAL QUESTION: DOES EVERY COUNTRY HAVE THE SAME WATER SUPPLY SYSTEM LIKE NYC?**

**“We’re studying Peru and it’s very important to investigate how the indigenous people of Peru get their drinking water.” Turn and talk to your neighbor and hypothesize about their water supply”. After children talk S**

* **SHARED READING: GIVE EVERY CHILD A COPY OF CHAPTER THREE FROM THE BOOK EXPLORING PERU – WITH THE FIVE THEMES OF GEOGRAPHY. MAKE A TRANSPARENCY OF THESE PAGES TO ALLOW STUDENTS TO SEE THE COLOR OF THE WATER AFTER POLLUTION.**
* **RE-VISIT THE THEME OF “HUMAN-ENVIRONMENT INTERACTION”**

**RE-DEFINE THE TERM AND CONNECT TO PERU.**

* **Students read along with the teacher and stop to question information they read. New vocabulary words are discussed as they appear in the text.**

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* **STUDENTS ARE GIVEN ADDITIONAL ARTICLES ABOUT PERU AND FURTHER DISCUSSIONS TO INSURE COMPREHENSION.**
* **DAY THREE: QUESTION: HOW IS THE WATER-SYSTEM OF NY SIMILAR OR DIFFERENT FROM THE SYSTEM IN PERU.?**
* **STUDENTS ARE GIVEN A VENN DIAGRAM TO COMPLETE USING THEIR RESOURCES (COPIES OF PAGES FROM THE BOOKS)**
* **THIS WILL ASSESS THEIR ABILITY TO DIFFERENTIATE AND COMPARE INFORMATION.**
* **DAY FOUR: TO ASSES STUDENTS’ ABILITY TO SUMMARIZE THE INFORMATION GIVEN THEY WILL RECEIVE “EXIT SHEETS” TO WRITE ABOUT WHAT THEY’VE DISCOVERED ABOUT THE TWO WATER SYSTEMS, AND THE INFLUENCE OF THE ENVIRONMENT.**

**REFLECTIONS:**

* **HOW CAN WE BECOME WATER CONSERVATIONISTS?**
* **WHAT SUGGESTIONS WOULD YOU GIVE TO THE PRESIDENT OF PERU TO HELP HIS COUNTRY SEND CLEAN WATER TO THE PEOPLE LIVING NEAR INDUSTRIES.**

**EXTENSIONS:**

* **STUDENTS ILLUSTRATE WITH WORDS A CHART SHOWING HOW**

**WATER GETS TO OUR HOMES AND BUILDINGS IN THE CIITY**

* **STUDENTS CAN MODEL WITH CLAY THE POLLUTION OF PERU’S WATERWAYS**
* **RESEARCH PERU’S IRRIGATION PROGRAM AND THE PROGRAM THAT STARTED IN 2006 “WATER FOR ALL – AGUA PARA TODOS”**
* **GO ON SCIENCE WEB-SITES TO FURTHER UNDERSTAND THE WATER CYCLE** [**www.epa.gov/enviroed**](http://www.epa.gov/enviroed) **go to Kid’s Page. Also** [**http://water.usg.gov/droplet**](http://water.usg.gov/droplet) **and** [**www.exploris.org/learn**](http://www.exploris.org/learn)
* **ClASS WILL VIEW FILTERED WATER AND WATER WITH A SMALL AMOUNT OF DIRT IN IT UNDER A MICROSCOPE. THEY WILL DRAW AND WRITE ABOUT THEIR FINDINGS.**
* **VISIT OUR RESERVOIR LOCATED IN CENTRAL PARK**
* **MAKE POSTERS TO PLACE AROUND THE SCHOOL ENCOURAGING STUDENTS TO BE CONSERVATIONISTS.**

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**WRITING EXTENSIONS:**

* **THESE WILL COMPLEMENT THE SCIENCE CURRICULUM/SOCIAL STUDIES.**
* **FOSS SCIENCE STORIES: (NON-FICTION) – STUDENTS READ “THE WATER CYCLE”, “WATER – A VITAL RESOURCE”, “WATER COMING INTO OUR HOMES”, AND “RUNOFF”. THESE STORIES WILL BE USED WITH THE FACTS, QUESTIONS, RESPONSE SHEET.**
* **STUDENTS READ A RIVER RAN WILD BY Lynne Cherry**

**ADDITIONAL STORIES: “HOW WATER CAN BECOME POLLUTED”**

**“MARION STODDART”**

**“POLLUTION PATROL”**

**Students can write a response or use the “FQR” sheet again**

* **STUDENTS READ: LETTING SWIFT RIVER GO by Jane Yolen**

**COMPARE AND CONTRAST THIS BOOK WITH A RIVER RAN WILD**

**Rl.3.2 STUDENTS USE GRAPHIC ORGANIZERS**